SEQUENCE LISTING

(1) GENERAL INFORMATION:

   (i) APPLICANT: Baca, Manuel
                  Wells, James A.
                  Presta, Leonard G.
                  Lowman, Henry B.
                  Chen, Yvonne M.

  (ii) TITLE OF INVENTION: ANTI-VEGF ANTIBODIES

 (iii) NUMBER OF SEQUENCES: 131

  (iv) CORRESPONDENCE ADDRESS:
       (A) ADDRESSEE: Genentech, Inc.
       (B) STREET: 1 DNA Way
       (C) CITY: South San Francisco
       (D) STATE: California
       (E) COUNTRY: USA
       (F) ZIP: 94080

   (v) COMPUTER READABLE FORM:
       (A) MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
       (B) COMPUTER: IBM PC compatible
       (C) OPERATING SYSTEM: PC-DOS/MS-DOS
       (D) SOFTWARE: WinPatin (Genentech)

  (vi) CURRENT APPLICATION DATA:
       (A) APPLICATION NUMBER: 08/908,469
       (B) FILING DATE: 06-AUG-97
       (C) CLASSIFICATION:

 (vii) PRIOR APPLICATION DATA:
       (A) APPLICATION NUMBER: 08/833,504
       (B) FILING DATE: 07-APR-1997

(viii) ATTORNEY/AGENT INFORMATION:
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       (C) REFERENCE/DOCKET NUMBER: P1093P1

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(2) INFORMATION FOR SEQ ID NO:1:

   (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 10 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Gly Tyr Thr Phe Thr Asn Tyr Gly Met Asn
  1   5   10

(2) INFORMATION FOR SEQ ID NO:2:

   (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 17 amino acids

1

```
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

  Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Ala Asp Phe
   1               5                  10                  15

  Lys Arg


(2) INFORMATION FOR SEQ ID NO:3:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

  Tyr Pro His Tyr Tyr Gly Ser Ser His Trp Tyr Phe Asp Val
   1               5                  10

(2) INFORMATION FOR SEQ ID NO:4:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 11 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

  Ser Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
   1               5                  10

(2) INFORMATION FOR SEQ ID NO:5:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

  Phe Thr Ser Ser Leu His Ser
   1               5

(2) INFORMATION FOR SEQ ID NO:6:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 9 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

  Gln Gln Tyr Ser Thr Val Pro Trp Thr
   1               5

(2) INFORMATION FOR SEQ ID NO:7:
```

(i) SEQUENCE CHARACTERISTICS:
             (A) LENGTH: 123 amino acids
             (B) TYPE: Amino Acid
             (D) TOPOLOGY: Linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1   5   10   15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20   25   30

Asn Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35   40   45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50   55   60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
                65   70   75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80   85   90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95   100   105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
                110   115   120

Val Ser Ser

(2) INFORMATION FOR SEQ ID NO:8:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 108 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1   5   10   15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
                20   25   30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35   40   45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50   55   60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
                65   70   75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80   85   90

3

```
Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95                  100                  105

Ile Lys Arg
```

(2) INFORMATION FOR SEQ ID NO:9:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 123 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

```
Glu Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Gln Pro Gly
 1               5                  10                  15

Glu Thr Val Arg Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr
                20                  25                  30

Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Lys Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Glu Thr Ser
                65                  70                  75

Ala Ser Thr Ala Tyr Leu Gln Ile Ser Asn Leu Lys Asn Asp Asp
                80                  85                  90

Thr Ala Thr Tyr Phe Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Ala Gly Thr Thr Val Thr
                110                 115                 120

Val Ser Ser
```

(2) INFORMATION FOR SEQ ID NO:10:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 108 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

```
Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu
 1               5                  10                  15

Gly Asp Arg Val Ile Ile Ser Cys Ser Ala Ser Gln Asp Ile Ser
                20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys
                35                  40                  45
```

```
Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile
                65                  70                  75

Ser Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu
                95                  100                 105

Ile Lys Arg
```

(2) INFORMATION FOR SEQ ID NO:11:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 113 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1                5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser
                20                  25                  30

Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Glu Trp Val Ser Val Ile Ser Gly Asp Gly Gly Ser Thr Tyr Tyr
                50                  55                  60

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
                65                  70                  75

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Phe Asp Tyr Trp Gly Gln
                95                  100                 105

Gly Thr Leu Val Thr Val Ser Ser
                110
```

(2) INFORMATION FOR SEQ ID NO:12:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 108 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1                5                   10                  15
```

```
Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
              20                  25                      30

Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
              35                  40                      45

Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val Pro Ser
              50                  55                      60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
              65                  70                      75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
              80                  85                      90

Tyr Asn Ser Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
              95                 100                     105

Ile Lys Arg
```

(2) INFORMATION FOR SEQ ID NO:13:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 107 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1               5                  10                      15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
              20                  25                      30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
              35                  40                      45

Leu Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
              50                  55                      60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
              65                  70                      75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
              80                  85                      90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
              95                 100                     105

Ile Lys
```

(2) INFORMATION FOR SEQ ID NO:14:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 123 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20                  25                  30

Asn Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Ile Ser Arg Asp Asn Ser
                65                  70                  75

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Arg Tyr Pro His Tyr Tyr Gly Ser
                95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
                110                 115                 120

Val Ser Ser
```

(2) INFORMATION FOR SEQ ID NO:15:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 107 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1               5                   10                  15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
                20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35                  40                  45

Leu Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile
                65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95                  100                 105

Ile Lys
```

7

(2) INFORMATION FOR SEQ ID NO:16:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 123 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20              25                  30

Asn Tyr Gly Met Asn Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu
                35              40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50              55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Ile Ser Leu Asp Thr Ser
                65          .       70                  75

Ala Ser Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80              85                  90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95              100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
                110             115                 120

Val Ser Ser
```

(2) INFORMATION FOR SEQ ID NO:17:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 11 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

```
Pro Lys Asn Ser Ser Met Ile Ser Asn Thr Pro
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:18:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 7 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

```
His Gln Ser Leu Gly Thr Gln
 1               5
```

(2) INFORMATION FOR SEQ ID NO:19:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 8 amino acids
      (B) TYPE: Amino Acid
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

His Gln Asn Leu Ser Asp Gly Lys
 1   5

(2) INFORMATION FOR SEQ ID NO:20:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 8 amino acids
      (B) TYPE: Amino Acid
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

His Gln Asn Ile Ser Asp Gly Lys
 1   5

(2) INFORMATION FOR SEQ ID NO:21:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 8 amino acids
      (B) TYPE: Amino Acid
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Val Ile Ser Ser His Leu Gly Gln
 1   5

(2) INFORMATION FOR SEQ ID NO:22:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 66 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

GATTTCAAAC GTCGTNYTAC TWTTTCTAGA GACAACTCCA AAAACACABY 50

TTACCTGCAG ATGAAC 66

(2) INFORMATION FOR SEQ ID NO:23:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 66 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GATTTCAAAC GTCGTNYTAC TWTTTCTTTA GACACCTCCG CAAGCACABY 50

TTACCTGCAG ATGAAC 66

(2) INFORMATION FOR SEQ ID NO:24:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 60 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

AGCCTGCGCG CTGAGGACAC TGCCGTCTAT TACTGTDYAA RGTACCCCCA 50

CTATTATGGG 60

(2) INFORMATION FOR SEQ ID NO:25:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 30 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

CTCAGCGCGC AGGCTGTTCA TCTGCAGGTA 30

(2) INFORMATION FOR SEQ ID NO:26:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 27 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

GCTGATATCC AGTTGACCCA GTCCCCG 27

(2) INFORMATION FOR SEQ ID NO:27:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 27 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

TCTGGGACGG ATTACACTCT GACCATC 27

(2) INFORMATION FOR SEQ ID NO:28:

```
      (i)  SEQUENCE CHARACTERISTICS:
           (A)  LENGTH: 75 base pairs
           (B)  TYPE: Nucleic Acid
           (C)  STRANDEDNESS: Single
           (D)  TOPOLOGY: Linear

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:28:


  CGTTTGTCCT GTGCARYTTC TGGCTATACC TTCACCAACT ATGGTATGAA 50

  CTGGRTCCGT CAGGCCCCGG GTAAG 75

(2) INFORMATION FOR SEQ ID NO:29:

      (i)  SEQUENCE CHARACTERISTICS:
           (A)  LENGTH: 24 base pairs
           (B)  TYPE: Nucleic Acid
           (C)  STRANDEDNESS: Single
           (D)  TOPOLOGY: Linear

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:29:


  GATATCCAGT TGACCCAGTC CCCG 24

(2) INFORMATION FOR SEQ ID NO:30:

      (i)  SEQUENCE CHARACTERISTICS:
           (A)  LENGTH: 21 base pairs
           (B)  TYPE: Nucleic Acid
           (C)  STRANDEDNESS: Single
           (D)  TOPOLOGY: Linear

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:30:


  GCTCCGAAAG TACTGATTTA C 21

(2) INFORMATION FOR SEQ ID NO:31:

      (i)  SEQUENCE CHARACTERISTICS:
           (A)  LENGTH: 54 base pairs
           (B)  TYPE: Nucleic Acid
           (C)  STRANDEDNESS: Single
           (D)  TOPOLOGY: Linear

     (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:31:


  CGTCGTTTCA CTTTTTCTGC AGACACCTCC AGCAACACAG TATACCTGCA 50

  GATG 54

(2) INFORMATION FOR SEQ ID NO:32:

      (i)  SEQUENCE CHARACTERISTICS:
           (A)  LENGTH: 25 base pairs
           (B)  TYPE: Nucleic Acid
           (C)  STRANDEDNESS: Single
           (D)  TOPOLOGY: Linear
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

CTATTACTGT GCAAAGTACC CCCAC 25

(2) INFORMATION FOR SEQ ID NO:33:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 24 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

GGGACGGATT TCACTCTGAC CATC 24

(2) INFORMATION FOR SEQ ID NO:34:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 26 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

GGTATGAACT GGGTCCGTCA GGCCCC 26

(2) INFORMATION FOR SEQ ID NO:35:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 57 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

CGTCGTTTCA CTTTTTCTTT AGACACCTCC AAAAGCACAG CATACCTGCA 50

GATGAAC 57

(2) INFORMATION FOR SEQ ID NO:36:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 53 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

GGGTCACCAT CACCTGCTAA GCATAATAAT AATAAAGCAA CTATTTAAAC 50

TGG 53

(2) INFORMATION FOR SEQ ID NO:37:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 52 base pairs
       (B) TYPE: Nucleic Acid
       (C) STRANDEDNESS: Single
       (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

GCGCAAGTCA GGATATTTAA TAATAATAAT AATGGTATCA ACAGAAACCA 50

GG 52

(2) INFORMATION FOR SEQ ID NO:38:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 48 base pairs
       (B) TYPE: Nucleic Acid
       (C) STRANDEDNESS: Single
       (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

GTCTATTACT GTGCAAAGTA ATAACACTAA TAAGGGAGCA GCCACTGG 48

(2) INFORMATION FOR SEQ ID NO:39:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 49 base pairs
       (B) TYPE: Nucleic Acid
       (C) STRANDEDNESS: Single
       (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

GGTACCCCCA CTATTATTAA TAATAATAAT GGTATTTCGA CGTCTGGGG 49

(2) INFORMATION FOR SEQ ID NO:40:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 53 base pairs
       (B) TYPE: Nucleic Acid
       (C) STRANDEDNESS: Single
       (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

CACTATTATG GGAGCAGCCA CTAATAATAA TAAGTCTGGG TCAAGGAACC 50

CTG 53

(2) INFORMATION FOR SEQ ID NO:41:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 53 base pairs

(B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

 TCCTGTGCAG CTTCTGGCTA ATAATTCTAA TAATAAGGTA TGAACTGGGT 50

 CCG 53

(2) INFORMATION FOR SEQ ID NO:42:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 52 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

 GAATGGGTTG GATGGATTAA CTAATAATAA GGTTAACCGA CCTATGCTGC 50

 GG 52

(2) INFORMATION FOR SEQ ID NO:43:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 49 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

 CTGTGCAAAG TACCCGTAAT ATTAATAATA ATAACACTGG TATTTCGAC 49

(2) INFORMATION FOR SEQ ID NO:44:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 48 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

 CGTTTCACTT TTTCTTAAGA CTAATCCAAA TAAACAGCAT ACCTGCAG 48

(2) INFORMATION FOR SEQ ID NO:45:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 46 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

                                14

GAATGGGTTG GATGGATTTA ATAATAATAA GGTGAACCGA CCTATG 46

(2) INFORMATION FOR SEQ ID NO:46:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 53 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

GGGTCACCAT CACCTGCNNS GCANNSNNSN NSNNSAGCAA CTATTTAAAC 50

TGG 53

(2) INFORMATION FOR SEQ ID NO:47:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 52 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

GCGCAAGTCA GGATATTNNS NNSNNSNNSN NSTGGTATCA ACAGAAACCA 50

GG 52

(2) INFORMATION FOR SEQ ID NO:48:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 48 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

GTCTATTACT GTGCAAAGNN SNNSCACNNS NNSGGGAGCA GCCACTGG 48

(2) INFORMATION FOR SEQ ID NO:49:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 49 base pairs
        (B) TYPE: Nucleic Acid
        (C) STRANDEDNESS: Single
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

GGTACCCCCA CTATTATNNS NNSNNSNNST GGTATTTCGA CGTCTGGGG 49

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:
   (A) LENGTH: 54 base pairs
   (B) TYPE: Nucleic Acid
   (C) STRANDEDNESS: Single
   (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

CACTATTATG GGAGCAGCCA CNNSNNSNNS NNSGTCTGGG GTCAAGGAAC 50

CCTG 54

(2) INFORMATION FOR SEQ ID NO:51:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 53 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

TCCTGTGCAG CTTCTGGCNN SNNSTTCNNS NNSNNSGGTA TGAACTGGGT 50

CCG 53

(2) INFORMATION FOR SEQ ID NO:52:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 52 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

GAATGGGTTG GATGGATTAA CNNSNNSNNS GGTNNSCCGA CCTATGCTGC 50

GG 52

(2) INFORMATION FOR SEQ ID NO:53:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 49 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

CTGTGCAAAG TACCCGNNST ATNNSNNSNN SNNSCACTGG TATTTCGAC 49

(2) INFORMATION FOR SEQ ID NO:54:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 48 base pairs

```
        (B)  TYPE: Nucleic Acid
        (C)  STRANDEDNESS: Single
        (D)  TOPOLOGY: Linear

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:54:


CGTTTCACTT TTTCTNNSGA CNNSTCCAAA NNSACAGCAT ACCTGCAG 48

(2)  INFORMATION FOR SEQ ID NO:55:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 46 base pairs
        (B)  TYPE: Nucleic Acid
        (C)  STRANDEDNESS: Single
        (D)  TOPOLOGY: Linear

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:55:


GAATGGGTTG GATGGATTNN SNNSNNSNNS GGTGAACCGA CCTATG 46

(2)  INFORMATION FOR SEQ ID NO:56:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 13 amino acids
        (B)  TYPE: Amino Acid
        (D)  TOPOLOGY: Linear

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:56:

Tyr Pro Tyr Tyr Arg Gly Thr Ser His Trp Tyr Phe Asp
 1               5                   10

(2)  INFORMATION FOR SEQ ID NO:57:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 13 amino acids
        (B)  TYPE: Amino Acid
        (D)  TOPOLOGY: Linear

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:57:

Tyr Pro Tyr Tyr Ile Asn Lys Ser His Trp Tyr Phe Asp
 1               5                   10

(2)  INFORMATION FOR SEQ ID NO:58:

    (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 13 amino acids
        (B)  TYPE: Amino Acid
        (D)  TOPOLOGY: Linear

    (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:58:

Tyr Pro Tyr Tyr Tyr Gly Thr Ser His Trp Tyr Phe Asp
 1               5                   10

(2)  INFORMATION FOR SEQ ID NO:59:

    (i)  SEQUENCE CHARACTERISTICS:
```

17

(A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Tyr Pro Tyr Tyr Tyr Asn Gln Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:60:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Tyr Pro Tyr Tyr Ile Ala Lys Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:61:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Tyr Pro Tyr Tyr Arg Asp Asn Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:62:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Tyr Pro Tyr Tyr Trp Gly Thr Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:63:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Tyr Pro Tyr Tyr Arg Gln Asn Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:64:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids

(B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Tyr Pro Tyr Tyr Arg Gln Ser Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:65:

    (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 13 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Tyr Pro Tyr Tyr Arg Asn Thr Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:66:

    (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 13 amino acids   ·
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Tyr Pro Tyr Tyr Lys Asn Thr Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:67:

    (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 13 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Tyr Pro Tyr Tyr Ile Glu Arg Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:68:

    (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 13 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Tyr Pro Tyr Tyr Arg Asn Ala Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:69:

    (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 13 amino acids
          (B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Tyr Pro Tyr Tyr Thr Thr Arg Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:70:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Tyr Pro Tyr Tyr Glu Gly Ser Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:71:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Tyr Pro Tyr Tyr Arg Gln Arg Gly His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:72:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Tyr Pro Tyr Tyr Thr Gly Arg Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:73:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Tyr Pro Tyr Tyr Thr Asn Thr Ser His Trp Tyr Phe Asp
 1   5   10

(2) INFORMATION FOR SEQ ID NO:74:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

```
Tyr Pro Tyr Tyr Arg Lys Gly Ser His Trp Tyr Phe Asp
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:75:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 13 amino acids
     (B) TYPE: Amino Acid
     (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

```
Tyr Pro Tyr Tyr Thr Gly Ser Ser His Trp Tyr Phe Asp
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:76:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 13 amino acids
     (B) TYPE: Amino Acid
     (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

```
Tyr Pro Tyr Tyr Arg Ser Gly Ser His Trp Tyr Phe Asp
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:77:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 13 amino acids
     (B) TYPE: Amino Acid
     (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

```
Tyr Pro Tyr Tyr Thr Asn Arg Ser His Trp Tyr Phe Asp
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:78:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 13 amino acids
     (B) TYPE: Amino Acid
     (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

```
Tyr Pro Tyr Tyr Arg Asn Ser Ser His Trp Tyr Phe Asp
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:79:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 13 amino acids
     (B) TYPE: Amino Acid
     (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Tyr Pro Tyr Tyr Lys Glu Ser Ser His Trp Tyr Phe Asp
1   5   10

(2) INFORMATION FOR SEQ ID NO:80:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Tyr Pro Tyr Tyr Arg Asp Ala Ser His Trp Tyr Phe Asp
1   5   10

(2) INFORMATION FOR SEQ ID NO:81:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Tyr Pro Tyr Tyr Arg Gln Lys Gly His Trp Tyr Phe Asp
1   5   10

(2) INFORMATION FOR SEQ ID NO:82:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
      . (D) TOPOLOGY: Linear

 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Tyr Pro Tyr Tyr Lys Gly Gly Ser His Trp Tyr Phe Asp
1   5   10

(2) INFORMATION FOR SEQ ID NO:83:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Tyr Pro Tyr Tyr Tyr Gly Ala Ser His Trp Tyr Phe Asp
1   5   10

(2) INFORMATION FOR SEQ ID NO:84:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

```
Tyr Pro Tyr Tyr Arg Gly Glu Ser His Trp Tyr Phe Asp
 1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:85:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 13 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

```
Tyr Pro Tyr Tyr Arg Ser Thr Ser His Trp Tyr Phe Asp
 1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:86:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

```
Gly Tyr Asp Phe Thr His Tyr Gly Met Asn
 1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:87:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

```
Gly Tyr Glu Phe Gln His Tyr Gly Met Asn
 1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:88:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

```
Gly Tyr Glu Phe Thr His Tyr Gly Met Asn
 1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:89:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

```
Gly Tyr Asp Phe Gly His Tyr Gly Met Asn
1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:90:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

```
Gly Tyr Asp Phe Ser His Tyr Gly Met Asn
1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:91:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

```
Gly Tyr Glu Phe Ser His Tyr Gly Met Asn
1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:92:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

```
Phe Ser Val Asp Val Ser Lys Ser Thr Ala
1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:93:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

```
Phe Ser Leu Asp Lys Ser Lys Ser Thr Ala
1               5                   10
```

(2) INFORMATION FOR SEQ ID NO:94:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

```
Phe Ser Leu Asp Val Trp Lys Ser Thr Ala
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:95:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 10 amino acids
      (B) TYPE: Amino Acid
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

```
Phe Ser Ile Asp Lys Ser Lys Ser Thr Ala
 1               5                  10
```

(2) INFORMATION FOR SEQ ID NO:96:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 42 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

```
GCAAAGTACC CGTACTATTA TGGGACGAGC CACTGGTATT TC 42
```

(2) INFORMATION FOR SEQ ID NO:97:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 48 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

```
GTCACCATCA CCTGCAGCGC AAGTCAGGAT ATTAGCAACT ATTTAAAC 48
```

(2) INFORMATION FOR SEQ ID NO:98:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 33 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

```
CCGTACTATT ATGGGAGCAG CCACTGGTAT TTC 33
```

(2) INFORMATION FOR SEQ ID NO:99:

   (i) SEQUENCE CHARACTERISTICS:
      (A) LENGTH: 6072 base pairs
      (B) TYPE: Nucleic Acid
      (C) STRANDEDNESS: Single
      (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

```
GAATTCAACT TCTCCATACT TTGGATAAGG AAATACAGAC ATGAAAAATC 50

TCATTGCTGA GTTGTTATTT AAGCTTTGGA GATTATCGTC ACTGCAATGC 100

TTCGCAATAT GGCGCAAAAT GACCAACAGC GGTTGATTGA TCAGGTAGAG 150

GGGGCGCTGT ACGAGGTAAA GCCCGATGCC AGCATTCCTG ACGACGATAC 200

GGAGCTGCTG CGCGATTACG TAAAGAAGTT ATTGAAGCAT CCTCGTCAGT 250

AAAAAGTTAA TCTTTTCAAC AGCTGTCATA AAGTTGTCAC GGCCGAGACT 300

TATAGTCGCT TTGTTTTTAT TTTTTAATGT ATTTGTAACT AGAATTCGAG 350

CTCGGTACCC GGGGATCCTC TAGAGGTTGA GGTGATTTTA TGAAAAGAA 400

TATCGCATTT CTTCTTGCAT CTATGTTCGT TTTTTCTATT GCTACAAACG 450

CGTACGCTGA TATCCAGTTG ACCCAGTCCC CGAGCTCCCT GTCCGCCTCT 500

GTGGGCGATA GGGTCACCAT CACCTGCAGC GCAAGTCAGG ATATTAGCAA 550

CTATTTAAAC TGGTATCAAC AGAAACCAGG AAAAGCTCCG AAACTACTGA 600

TTTACTTCAC CTCCTCTCTC CACTCTGGAG TCCCTTCTCG CTTCTCTGGA 650

TCCGGTTCTG GGACGGATTA CACTCTGACC ATCAGCAGTC TGCAGCCAGA 700

AGACTTCGCA ACTTATTACT GTCAACAGTA TAGCACCGTG CCGTGGACGT 750

TTGGACAGGG TACCAAGGTG GAGATCAAAC GAACTGTGGC TGCACCATCT 800

GTCTTCATCT TCCCGCCATC TGATGAGCAG TTGAAATCTG GAACTGCTTC 850

TGTTGTGTGC CTGCTGAATA ACTTCTATCC CAGAGAGGCC AAAGTACAGT 900

GGAAGGTGGA TAACGCCCTC CAATCGGGTA ACTCCCAGGA GAGTGTCACA 950

GAGCAGGACA GCAAGGACAG CACCTACAGC CTCAGCAGCA CCCTGACGCT 1000

GAGCAAAGCA GACTACGAGA AACACAAAGT CTACGCCTGC GAAGTCACCC 1050

ATCAGGGCCT GAGCTCGCCC GTCACAAAGA GCTTCAACAG GGGAGAGTGT 1100

TAAGCTGATC CTCTACGCCG GACGCATCGT GGCCCTAGTA CGCAACTAGT 1150

CGTAAAAAGG GTATCTAGAG GTTGAGGTGA TTTTATGAAA AGAATATCG 1200

CATTTCTTCT TGCATCTATG TTCGTTTTTT CTATTGCTAC AAACGCGTAC 1250

GCTGAGGTTC AGCTGGTGGA GTCTGGCGGT GGCCTGGTGC AGCCAGGGGG 1300

CTCACTCCGT TTGTCCTGTG CAGCTTCTGG CTATACCTTC ACCAACTATG 1350

GTATGAACTG GATCCGTCAG GCCCCGGGTA AGGGCCTGGA ATGGGTTGGA 1400

TGGATTAACA CCTATACCGG TGAACCGACC TATGCTGCGG ATTTCAAACG 1450
```

```
TCGTTTTACT ATATCTGCAG ACACCTCCAG CAACACAGTT TACCTGCAGA 1500

TGAACAGCCT GCGCGCTGAG GACACTGCCG TCTATTACTG TGCAAAGTAC 1550

CCGCACTATT ATGGGAGCAG CCACTGGTAT TTCGACGTCT GGGGTCAAGG 1600

AACCCTGGTC ACCGTCTCCT CGGCCTCCAC CAAGGGCCCA TCGGTCTTCC 1650

CCCTGGCACC CTCCTCCAAG AGCACCTCTG GGGGCACAGC GGCCCTGGGC 1700

TGCCTGGTCA AGGACTACTT CCCCGAACCG GTGACGGTGT CGTGGAACTC 1750

AGGCGCCCTG ACCAGCGGCG TGCACACCTT CCCGGCTGTC CTACAGTCCT 1800

CAGGACTCTA CTCCCTCAGC AGCGTGGTGA CCGTGCCCTC CAGCAGCTTG 1850

GGCACCCAGA CCTACATCTG CAACGTGAAT CACAAGCCCA GCAACACCAA 1900

GGTCGACAAG AAAGTTGAGC CCAAATCTTG TGACAAAACT CACCTCTAGA 1950

GTGGCGGTGG CTCTGGTTCC GGTGATTTTG ATTATGAAAA GATGGCAAAC 2000

GCTAATAAGG GGGCTATGAC CGAAAATGCC GATGAAAACG CGCTACAGTC 2050

TGACGCTAAA GGCAAACTTG ATTCTGTCGC TACTGATTAC GGTGCTGCTA 2100

TCGATGGTTT CATTGGTGAC GTTTCCGGCC TTGCTAATGG TAATGGTGCT 2150

ACTGGTGATT TTGCTGGCTC TAATTCCCAA ATGGCTCAAG TCGGTGACGG 2200

TGATAATTCA CCTTTAATGA ATAATTTCCG TCAATATTTA CCTTCCCTCC 2250

CTCAATCGGT TGAATGTCGC CCTTTTGTCT TTAGCGCTGG TAAACCATAT 2300

GAATTTTCTA TTGATTGTGA CAAAATAAAC TTATTCCGTG GTGTCTTTGC 2350

GTTTCTTTTA TATGTTGCCA CCTTTATGTA TGTATTTTCT ACGTTTGCTA 2400

ACATACTGCG TAATAAGGAG TCTTAATCAT GCCAGTTCTT TTGGCTAGCG 2450

CCGCCCTATA CCTTGTCTGC CTCCCCGCGT TGCGTCGCGG TGCATGGAGC 2500

CGGGCCACCT CGACCTGAAT GGAAGCCGGC GGCACCTCGC TAACGGATTC 2550

ACCACTCCAA GAATTGGAGC CAATCAATTC TTGCGGAGAA CTGTGAATGC 2600

GCAAACCAAC CCTTGGCAGA ACATATCCAT CGCGTCCGCC ATCTCCAGCA 2650

GCCGCACGCG GCGCATCTCG GGCAGCGTTG GGTCCTGGCC ACGGGTGCGC 2700

ATGATCGTGC TCCTGTCGTT GAGGACCCGG CTAGGCTGGC GGGGTTGCCT 2750

TACTGGTTAG CAGAATGAAT CACCGATACG CGAGCGAACG TGAAGCGACT 2800

GCTGCTGCAA AACGTCTGCG ACCTGAGCAA CAACATGAAT GGTCTTCGGT 2850

TTCCGTGTTT CGTAAAGTCT GGAAACGCGG AAGTCAGCGC CCTGCACCAT 2900

TATGTTCCGG ATCTGCATCG CAGGATGCTG CTGGCTACCC TGTGGAACAC 2950
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```
CTACATCTGT ATTAACGAAG CGCTGGCATT GACCCTGAGT GATTTTTCTC 3000

TGGTCCCGCC GCATCCATAC CGCCAGTTGT TTACCCTCAC AACGTTCCAG 3050

TAACCGGGCA TGTTCATCAT CAGTAACCCG TATCGTGAGC ATCCTCTCTC 3100

GTTTCATCGG TATCATTACC CCCATGAACA GAAATTCCCC CTTACACGGA 3150

GGCATCAAGT GACCAAACAG GAAAAAACCG CCCTTAACAT GGCCCGCTTT 3200

ATCAGAAGCC AGACATTAAC GCTTCTGGAG AAACTCAACG AGCTGGACGC 3250

GGATGAACAG GCAGACATCT GTGAATCGCT TCACGACCAC GCTGATGAGC 3300

TTTACCGCAG GATCCGGAAA TTGTAAACGT TAATATTTTG TTAAAATTCG 3350

CGTTAAATTT TTGTTAAATC AGCTCATTTT TTAACCAATA GGCCGAAATC 3400

GGCAAAATCC CTTATAAATC AAAAGAATAG ACCGAGATAG GGTTGAGTGT 3450

TGTTCCAGTT TGGAACAAGA GTCCACTATT AAAGAACGTG GACTCCAACG 3500

TCAAAGGGCG AAAAACCGTC TATCAGGGCT ATGGCCCACT ACGTGAACCA 3550

TCACCCTAAT CAAGTTTTTT GGGGTCGAGG TGCCGTAAAG CACTAAATCG 3600

GAACCCTAAA GGGAGCCCCC GATTTAGAGC TTGACGGGGA AAGCCGGCGA 3650

ACGTGGCGAG AAAGGAAGGG AAGAAAGCGA AAGGAGCGGG CGCTAGGGCG 3700

CTGGCAAGTG TAGCGGTCAC GCTGCGCGTA ACCACCACAC CCGCCGCGCT 3750

TAATGCGCCG CTACAGGGCG CGTCCGGATC CTGCCTCGCG CGTTTCGGTG 3800

ATGACGGTGA AAACCTCTGA CACATGCAGC TCCCGGAGAC GGTCACAGCT 3850

TGTCTGTAAG CGGATGCCGG GAGCAGACAA GCCCGTCAGG GCGCGTCAGC 3900

GGGTGTTGGC GGGTGTCGGG GCGCAGCCAT GACCCAGTCA CGTAGCGATA 3950

GCGGAGTGTA TACTGGCTTA ACTATGCGGC ATCAGAGCAG ATTGTACTGA 4000

GAGTGCACCA TATGCGGTGT GAAATACCGC ACAGATGCGT AAGGAGAAAA 4050

TACCGCATCA GGCGCTCTTC CGCTTCCTCG CTCACTGACT CGCTGCGCTC 4100

GGTCGTTCGG CTGCGGCGAG CGGTATCAGC TCACTCAAAG GCGGTAATAC 4150

GGTTATCCAC AGAATCAGGG GATAACGCAG GAAAGAACAT GTGAGCAAAA 4200

GGCCAGCAAA AGGCCAGGAA CCGTAAAAAG GCCGCGTTGC TGGCGTTTTT 4250

CCATAGGCTC CGCCCCCCTG ACGAGCATCA CAAAAATCGA CGCTCAAGTC 4300

AGAGGTGGCG AAACCCGACA GGACTATAAA GATACCAGGC GTTTCCCCCT 4350

GGAAGCTCCC TCGTGCGCTC TCCTGTTCCG ACCCTGCCGC TTACCGGATA 4400

CCTGTCCGCC TTTCTCCCTT CGGGAAGCGT GGCGCTTTCT CATAGCTCAC 4450

GCTGTAGGTA TCTCAGTTCG GTGTAGGTCG TTCGCTCCAA GCTGGGCTGT 4500
```

GTGCACGAAC CCCCCGTTCA GCCCGACCGC TGCGCCTTAT CCGGTAACTA 4550

TCGTCTTGAG TCCAACCCGG TAAGACACGA CTTATCGCCA CTGGCAGCAG 4600

CCACTGGTAA CAGGATTAGC AGAGCGAGGT ATGTAGGCGG TGCTACAGAG 4650

TTCTTGAAGT GGTGGCCTAA CTACGGCTAC ACTAGAAGGA CAGTATTTGG 4700

TATCTGCGCT CTGCTGAAGC CAGTTACCTT CGGAAAAAGA GTTGGTAGCT 4750

CTTGATCCGG CAAACAAACC ACCGCTGGTA GCGGTGGTTT TTTTGTTTGC 4800

AAGCAGCAGA TTACGCGCAG AAAAAAAGGA TCTCAAGAAG ATCCTTTGAT 4850

CTTTTCTACG GGGTCTGACG CTCAGTGGAA CGAAAACTCA CGTTAAGGGA 4900

TTTTGGTCAT GAGATTATCA AAAAGGATCT TCACCTAGAT CCTTTTAAAT 4950

TAAAAATGAA GTTTTAAATC AATCTAAAGT ATATATGAGT AAACTTGGTC 5000

TGACAGTTAC CAATGCTTAA TCAGTGAGGC ACCTATCTCA GCGATCTGTC 5050

TATTTCGTTC ATCCATAGTT GCCTGACTCC CCGTCGTGTA GATAACTACG 5100

ATACGGGAGG GCTTACCATC TGGCCCCAGT GCTGCAATGA TACCGCGAGA 5150

CCCACGCTCA CCGGCTCCAG ATTTATCAGC AATAAACCAG CCAGCCGGAA 5200

GGGCCGAGCG CAGAAGTGGT CCTGCAACTT TATCCGCCTC CATCCAGTCT 5250

ATTAATTGTT GCCGGGAAGC TAGAGTAAGT AGTTCGCCAG TTAATAGTTT 5300

GCGCAACGTT GTTGCCATTG CTGCAGGCAT CGTGGTGTCA CGCTCGTCGT 5350

TTGGTATGGC TTCATTCAGC TCCGGTTCCC AACGATCAAG GCGAGTTACA 5400

TGATCCCCCA TGTTGTGCAA AAAAGCGGTT AGCTCCTTCG GTCCTCCGAT 5450

CGTTGTCAGA AGTAAGTTGG CCGCAGTGTT ATCACTCATG GTTATGGCAG 5500

CACTGCATAA TTCTCTTACT GTCATGCCAT CCGTAAGATG CTTTTCTGTG 5550

ACTGGTGAGT ACTCAACCAA GTCATTCTGA GAATAGTGTA TGCGGCGACC 5600

GAGTTGCTCT TGCCCGGCGT CAACACGGGA TAATACCGCG CCACATAGCA 5650

GAACTTTAAA AGTGCTCATC ATTGGAAAAC GTTCTTCGGG GCGAAAACTC 5700

TCAAGGATCT TACCGCTGTT GAGATCCAGT TCGATGTAAC CCACTCGTGC 5750

ACCCAACTGA TCTTCAGCAT CTTTTACTTT CACCAGCGTT CTGGGTGAG 5800

CAAAAACAGG AAGGCAAAAT GCCGCAAAAA AGGGAATAAG GGCGACACGG 5850

AAATGTTGAA TACTCATACT CTTCCTTTTT CAATATTATT GAAGCATTTA 5900

TCAGGGTTAT TGTCTCATGA GCGGATACAT ATTTGAATGT ATTTAGAAAA 5950

ATAAACAAAT AGGGGTTCCG CGCACATTTC CCCGAAAAGT GCCACCTGAC 6000

GTCTAAGAAA CCATTATTAT CATGACATTA ACCTATAAAA ATAGGCGTAT 6050

CACGAGGCCC TTTCGTCTTC AA 6072

(2) INFORMATION FOR SEQ ID NO:100:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 237 amino acids
       (B) TYPE: PRT
       (D) TOPOLOGY:

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

```
Met Lys Lys Asn Ile Ala Phe Leu Leu Ala Ser Met Phe Val Phe
 1               5                  10                  15

Ser Ile Ala Thr Asn Ala Tyr Ala Asp Ile Gln Leu Thr Gln Ser
                20                  25                  30

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr
                35                  40                  45

Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp Tyr Gln
                50                  55                  60

Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Phe Thr Ser
                65                  70                  75

Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
                80                  85                  90

Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
                95                  100                 105

Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Thr Val Pro Trp Thr
                110                 115                 120

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
                125                 130                 135

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
                140                 145                 150

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg
                155                 160                 165

Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
                170                 175                 180

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
                185                 190                 195

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
                200                 205                 210

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
                215                 220                 225

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
                230                 235
```

(2) INFORMATION FOR SEQ ID NO:101:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1               5                   10                  15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
                20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35                  40                  45

Leu Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile
                65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95                  100                 105

Ile Lys Arg Thr Val
                110
```

(2) INFORMATION FOR SEQ ID NO:102:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 118 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20                  25                  30

Asn Tyr Gly Met Asn Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Ile Ser Ala Asp Thr Ser
                65                  70                  75

Ser Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90
```

```
Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
              95                  100                  105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
              110                  115
```

(2) INFORMATION FOR SEQ ID NO:103:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1               5                  10                  15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
              20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
              35                  40                  45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
              50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile
              65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
              80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
              95                  100                 105

Ile Lys Arg Thr Val
              110
```

(2) INFORMATION FOR SEQ ID NO:104:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 118 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
              20                  25                  30

Asn Tyr Gly Met Asn Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu
              35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
              50                  55                  60
```

```
Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Ala Asp Thr Ser
                65              70              75

Ser Asn Thr Val Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80              85              90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95              100             105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
                110             115
```

(2) INFORMATION FOR SEQ ID NO:105:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1              5               10              15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
                20              25              30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35              40              45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50              55              60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
                65              70              75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80              85              90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95              100             105

Ile Lys Arg Thr Val
                110
```

(2) INFORMATION FOR SEQ ID NO:106:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 118 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1              5               10              15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20              25              30
```

```
Asn Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
            35                      40                      45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
            50                      55                      60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
            65                      70                      75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
            80                      85                      90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
            95                      100                     105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
            110                     115
```

(2) INFORMATION FOR SEQ ID NO:107:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 110 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1               5                   10                      15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Asn Glu Gln Leu Ser
            20                      25                      30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
            35                      40                      45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
            50                      55                      60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
            65                      70                      75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
            80                      85                      90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
            95                      100                     105

Ile Lys Arg Thr Val
            110
```

(2) INFORMATION FOR SEQ ID NO:108:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 118 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

34

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20                  25                  30

Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
                65                  70                  75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
                110                 115
```

(2) INFORMATION FOR SEQ ID NO:109:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1               5                   10                  15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Asn Glu Gln Leu Ser
                20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35                  40                  45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
                65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95                  100                 105

Ile Lys Arg Thr Val
                110
```

(2) INFORMATION FOR SEQ ID NO:110:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 118 amino acids

(B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1   5   10   15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Asp Phe Thr
                20   25   30

His Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35   40   45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50   55   60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
                65   70   75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80   85   90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro His Tyr Tyr Gly Ser
                95   100   105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
                110   115

(2) INFORMATION FOR SEQ ID NO:111:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1   5   10   15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Asn Glu Gln Leu Ser
                20   25   30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35   40   45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50   55   60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
                65   70   75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80   85   90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95   100   105

Ile Lys Arg Thr Val
                110

                                36

(2) INFORMATION FOR SEQ ID NO:112:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 118 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr
                20                  25                  30

Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
                65                  70                  75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro Tyr Tyr Tyr Gly Thr
                95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
                110                 115
```

(2) INFORMATION FOR SEQ ID NO:113:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 110 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1               5                   10                  15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Asn Glu Gln Leu Ser
                20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35                  40                  45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
                50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
                65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90
```

37

```
Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
              95                  100                 105

Ile Lys Arg Thr Val
              110
```

(2) INFORMATION FOR SEQ ID NO:114:

   (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 118 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Asp Phe Thr
              20                  25                  30

His Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
              35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
              50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
              65                  70                  75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
              80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro Tyr Tyr Tyr Gly Thr
              95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
              110                 115
```

(2) INFORMATION FOR SEQ ID NO:115:

   (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 110 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

```
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
 1               5                  10                  15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
              20                  25                  30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
              35                  40                  45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
              50                  55                  60
```

```
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
            65                  70                  75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
            80                  85                  90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
            95                  100                 105

Ile Lys Arg Thr Val
            110
```

(2) INFORMATION FOR SEQ ID NO:116:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 118 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Asp Phe Thr
            20                  25                  30

His Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
            35                  40                  45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
            50                  55                  60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
            65                  70                  75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
            80                  85                  90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro Tyr Tyr Tyr Gly Thr
            95                  100                 105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu
            110                 115
```

(2) INFORMATION FOR SEQ ID NO:117:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 10 amino acids
       (B) TYPE: Amino Acid
       (D) TOPOLOGY: Linear

 (ix) FEATURE:
       (A) NAME/KEY: Modified-site
       (B) LOCATION: 3
       (C) IDENTIFICATION METHOD:
       (D) OTHER INFORMATION: Where the X at position 3 represents either
Aspartic acid, Threonine or Glutamic acid

 (ix) FEATURE:
       (A) NAME/KEY: Modified-site

(B) LOCATION: 4
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 4 represents either
Phenyalanine, Tryptophan or Tyrosine

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 5
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at osition 5 represents either
Threonine, Glutamine, Glycine or Serine

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 6
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 6 is either Histidine
or Asparagine

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 9
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 9 represents either
Methionine or Isoleucine

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

 Gly Tyr Xaa Xaa Xaa Xaa Tyr Gly Xaa Asn
   1   5   10

(2) INFORMATION FOR SEQ ID NO:118:

   (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 17 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 5
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 5 represents either
Tyrosine or Tryptophan

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

 Trp Ile Asn Thr Xaa Thr Gly Glu Pro Thr Tyr Ala Ala Asp Phe
   1   5   10   15

 Lys Arg

(2) INFORMATION FOR SEQ ID NO:119:

   (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (ix) FEATURE:

```
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 3
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 3 represents either
Histidine or Tyrosine

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 5
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 5 represents either
Tyrosine, Arginine, Lysine, Isoleucine, Threonine, Glutamic acid or
Tryptophan

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 6
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 6 represents either
glycine, Arginine, Alanine, Aspartic acid, Glutamine, Glutamic acid,
Threonine, Leucine aor Serine

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 7
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 7 represents either
Serine, Threonine, Lysine, Glutamine, Asparagine, Arginine, Alanine, Glutamic
acid or Glycine

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 8
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 8 represents either
Serine or Glycine

  (xi)  SEQUENCE DESCRIPTION: SEQ ID NO:119:

Tyr Pro Xaa Tyr Xaa Xaa Xaa Xaa His Trp Tyr Phe Asp Val
  1               5                   10

(2)  INFORMATION FOR SEQ ID NO:120:

  (i)  SEQUENCE CHARACTERISTICS:
        (A)  LENGTH: 10 amino acids
        (B)  TYPE: Amino Acid
        (D)  TOPOLOGY: Linear

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 1
        (C)  IDENTIFICATION METHOD:
        (D)  OTHER INFORMATION: Where the X at position 1 represents either
Phenyalanine, Isoleucine, Valine, Leucine or Alanine

  (ix)  FEATURE:
        (A)  NAME/KEY: Modified-site
        (B)  LOCATION: 3
        (C)  IDENTIFICATION METHOD:
```

(D) OTHER INFORMATION: Where the X at position 3 represents either
Alanine, Leucine, Valine or Isoleucine

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 5
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 5 represents either
Threonine, Valine or Lysine

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 6
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 6 represents either
Serine or Tryptophan

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 7
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 7 represents either
Serine or Lysine

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 8
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 8 represents either
Asparagine or Serine

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 10
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 10 represents either
Valine, Alanine, Leucine or Isoleucine

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

 Xaa Ser Xaa Asp Xaa Xaa Xaa Xaa Thr Xaa
   1   5   10

(2) INFORMATION FOR SEQ ID NO:121:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 11 amino acids
          (B) TYPE: Amino Acid
          (D) TOPOLOGY: Linear

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 1
          (C) IDENTIFICATION METHOD:
          (D) OTHER INFORMATION: Where the X at position 1 represents either
Arginine or Serine

     (ix) FEATURE:
          (A) NAME/KEY: Modified-site
          (B) LOCATION: 3
          (C) IDENTIFICATION METHOD:

(D) OTHER INFORMATION: Where the X at position 3 represents either
Serine or Asparagine

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 4
       ·(C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 4 represents either
Glutamine or Glutamic acid

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 5
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 5 represents either
Glutamine or Aspartic acid

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 6
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 6 represents either
Isoleucine or Leucine

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

 Xaa Ala Xaa Xaa Xaa Xaa Ser Asn Tyr Leu Asn
    1   5   10

(2) INFORMATION FOR SEQ ID NO:122:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

 Phe Thr Ser Ser Leu His Ser
    1   5

(2) INFORMATION FOR SEQ ID NO:123:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 9 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 5
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 5 represents either
Threonine, Alanine or Asparagine

   (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 6
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 6 represents either
Valine or Threonine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Gln Gln Tyr Ser Xaa Xaa Pro Trp Thr
  1   5

(2) INFORMATION FOR SEQ ID NO:124:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 108 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 4
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 4 represents either
Methionine or Leucine

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Asp Ile Gln Xaa Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
  1   5   10   15

Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser
               20   25   30

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
               35   40   45

Val Leu Ile Tyr Phe Thr Ser Ser Leu His Ser Gly Val Pro Ser
               50   55   60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
               65   70   75

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
               80   85   90

Tyr Ser Thr Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
               95   100   105

Ile Lys Arg

(2) INFORMATION FOR SEQ ID NO:125:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 123 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 28
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 28 represents either
Threonine or Aspartic acid

  (ix) FEATURE:

(A) NAME/KEY: Modified-site
                (B) LOCATION: 31
                (C) IDENTIFICATION METHOD:
                (D) OTHER INFORMATION: Where the X at position 31 represents either
Asparagine or Histidine

        (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                (B) LOCATION: 101
                (C) IDENTIFICATION METHOD:
                (D) OTHER INFORMATION: Where the X at position 101 represents either
Tyrosine or Histidine

        (ix) FEATURE:
                (A) NAME/KEY: Modified-site
                (B) LOCATION: 105
                (C) IDENTIFICATION METHOD:
                (D) OTHER INFORMATION: Where the X at position 105 represents either
Serine or Threonine

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 1   5   10   15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Xaa Phe Thr
                20   25   30

Xaa Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
                35   40   45

Glu Trp Val Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr
                50   55   60

Ala Ala Asp Phe Lys Arg Arg Phe Thr Phe Ser Leu Asp Thr Ser
                65   70   75

Lys Ser Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80   85   90

Thr Ala Val Tyr Tyr Cys Ala Lys Tyr Pro Xaa Tyr Tyr Gly Xaa
                95   100   105

Ser His Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
                110   115   120

Val Ser Ser

(2) INFORMATION FOR SEQ ID NO:126:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Gly Tyr Asp Phe Thr His Tyr Gly Met Asn
 1   5   10

(2) INFORMATION FOR SEQ ID NO:127:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

 Tyr Pro Tyr Tyr Tyr Gly Thr Ser His Trp Tyr Phe Asp Val
  1   5   10

(2) INFORMATION FOR SEQ ID NO:128:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 3
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 3 represents either
Threonine or Aspartic acid

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

 Gly Tyr Xaa Phe Thr Xaa Tyr Gly Met Asn
  1   5   10

(2) INFORMATION FOR SEQ ID NO:129:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14 amino acids
        (B) TYPE: Amino Acid
        (D) TOPOLOGY: Linear

  (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 3
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 3 represents either
Tyrosine or Histidine

  (ix) FEATURE:
        (A) NAME/KEY: Modified-site
        (B) LOCATION: 7
        (C) IDENTIFICATION METHOD:
        (D) OTHER INFORMATION: Where the X at position 7 represents either
Serine or Threonine

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

 Tyr Pro Xaa Tyr Tyr Gly Xaa Ser His Trp Tyr Phe Asp Val
  1   5   10

(2) INFORMATION FOR SEQ ID NO:130:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 254 amino acids

(B) TYPE: PRT
          (D) TOPOLOGY:

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Met Lys Lys Asn Ile Ala Phe Leu Leu Ala Ser Met Phe Val Phe
 1   5   10   15

Ser Ile Ala Thr Asn Ala Tyr Ala Glu Val Gln Leu Val Glu Ser
                 20   25   30

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys
                 35   40   45

Ala Ala Ser Gly Tyr Thr Phe Thr Asn Tyr Gly Met Asn Trp Ile
                 50   55   60

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Trp Ile Asn
                 65   70   75

Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Ala Asp Phe Lys Arg Arg
                 80   85   90

Phe Thr Ile Ser Ala Asp Thr Ser Ser Asn Thr Val Tyr Leu Gln
                 95   100   105

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                 110   115   120

Lys Tyr Pro His Tyr Tyr Gly Ser Ser His Trp Tyr Phe Asp Val
                 125   130   135

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
                 140   145   150

Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
                 155   160   165

Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
                 170   175   180

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
                 185   190   195

Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
                 200   205   210

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln
                 215   220   225

Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
                 230   235   240

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Leu
                 245   250

(2) INFORMATION FOR SEQ ID NO:131:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 158 amino acids
          (B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

```
Ser Gly Gly Gly Ser Gly Ser Gly Asp Phe Asp Tyr Glu Lys Met
 1               5               10              15

Ala Asn Ala Asn Lys Gly Ala Met Thr Glu Asn Ala Asp Glu Asn
                20              25              30

Ala Leu Gln Ser Asp Ala Lys Gly Lys Leu Asp Ser Val Ala Thr
                35              40              45

Asp Tyr Gly Ala Ala Ile Asp Gly Phe Ile Gly Asp Val Ser Gly
                50              55              60

Leu Ala Asn Gly Asn Gly Ala Thr Gly Asp Phe Ala Gly Ser Asn
                65              70              75

Ser Gln Met Ala Gln Val Gly Asp Gly Asp Asn Ser Pro Leu Met
                80              85              90

Asn Asn Phe Arg Gln Tyr Leu Pro Ser Leu Pro Gln Ser Val Glu
                95              100             105

Cys Arg Pro Phe Val Phe Ser Ala Gly Lys Pro Tyr Glu Phe Ser
                110             115             120

Ile Asp Cys Asp Lys Ile Asn Leu Phe Arg Gly Val Phe Ala Phe
                125             130             135

Leu Leu Tyr Val Ala Thr Phe Met Tyr Val Phe Ser Thr Phe Ala
                140             145             150

Asn Ile Leu Arg Asn Lys Glu Ser
                155
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